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ABSTRACT

Elementary school students in the third, fourth, and fifth grades were asked to do three different tasks in an attempt to determine how frequently children at these various ages use figurative language. Results for a Composition Task showed that children tend to produce a greater number of frozen than novel figures, and that the absolute level of such usage decreased over the three grades. Results for a Multiple Uses Task revealed that children tended to produce more frozen than novel figures and that both types of figures showed a marked increase over grade. Results for a Comparison Task also indicated that the use of figurative language increased over grade level and that under the conditions of this task, children used more novel than frozen figures. All in all, present results were taken to mean that the Composition Task is not a particularly good one for assessing developmental trends in figurative language usage. In addition, these results show that children as early as the third grade are able to use figurative language effectively, and that a Comparison Task represents one good way in which to encourage children to use novel figurative language. (Author/CS)

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The Development of Figurative Language in School Children[1]

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Although there have been many different ways of describing the essential process at work in a creative act--from regression in the service of the ego (Kris, 1952) to the bisociation of different matrices (Koestler, 1964)--perhaps the simplest and most direct description has been offered by Gordon (1961): Make the strange familiar and the familiar strange. As he and others point out, one aspect of human language that seems ideally suited to this dual function is that of figurative language. The essential property of such language is that no one takes it literally--it is always meant to be taken as a somewhat different or strange way of saying a familiar idea, or as an ordinary or familiar way of expressing a strange idea.

Although much has been written on the development of language in children, there has been only one study directly concerned with the development of figurative language--and not an extensive one at that. In this study Asch and Nerlove (1960) used fifty children (five groups with ten subjects in each group), ranging in age from three to twelve. Each of the children in this study, all of whom came from upper middle class homes in the Swarthmore Area, was interviewed on a one to one basis and questioned about a limited number of double-function terms, i.e., terms such as sweet or hard which refer both to the physical properties of things as well as to the psychological properties of people. The results of this study indicated that mastery of double-function terms followed a regular development course, with young children tending first to use these terms strictly in reference to objects. The psychological sense of a

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double-function term seemed to come later and then apparently as a separate vocabulary item independent of its physical meaning (i.e., something on the order of a homonym). The realization of a double-function property to these terms was the last thing to occur and then usually not spontaneously within the age groups studied.

There is, however, some problem with this interpretation given the procedure and the specific double-function terms actually used. All of these terms (at least all of the terms specifically mentioned in the text of the study) involve frozen metaphors; that is, metaphors which exist as separate lexical entries. So, for example, if we look under the entry "hard," in as old a dictionary as Webster's Universal Dictionary of the English Language (1937), we find that the fifth definition (out of fourteen) runs as follows: "unfeeling, not easily moved by pity,...severe, obdurate,...as a hard landlord (p. 766)." Metaphors that regularly appear in a dictionary should be learned as separate lexical items and need not necessarily, in the minds of children, have any connection whatsoever with the meaning of the term as it might be applied to a physical referent. The question of when (at what age) and in what manner children come to use and understand novel or non-frozen metaphors,is, therefore, essentially left untouched by this study.

The specific purpose of the present study was to develop some age trends as to when children come to use figurative language. In this study we assumed that asking a child to articulate the points of similarity between an example of figurative language and its parent meaning is probably too demanding a task. Rather, it seemed more reasonable to ask when children come first to use figurative language rather than to ask when they first are able to explain what somebody else might have had in mind when he, and not the child, used a particular figure. In order to accomplish this more limited goal, we had three independent judges rate compositions produced by a large group of third, fourth,

and fifth grade students so as to determine how often these children used novel and frozen figures in their written work.[2]

Procedure

Subjects. - The sample consisted of six classes of children attending West Hills Elementary School in Knoxville, Tennessee. The six classes were selected so as to have two from each of three grade levels--third, fourth and fifth. Because these groups were used in further research, one class in each grade was designated as a Control class while the other was designated as an Experimental class. For the present study these designations are essentially superfluous. The particular elementary school selected for observation is located in a middle to upper middle class neighborhood and contains a fairly homogeneous white population; one probably similar to that used by Asch and Nerlove. All in all there were 53 children in the third grade, 62 in the fourth grade, and 59 in the fifth grade, making a total of 174 children.

Procedure. - Each of the six participating teachers was contacted and asked for permission to gather compositions in her class. All were told the normative purposes of the study and were asked to have their students write compositions on one of the following five topics.[3]

1. What would you do if all trees disappeared?
   (Describe what it would look like. Think of what trees do for us. What would happen?)

2. Write the adventures of a lazy boy lost in a forest.
   (How would he feel? What would he think about? What would he do? Describe what the forest would look like to him after he realized he was lost.)

3. How would you feel if you were in a pet store and one of the goldfish started to talk to you?
(What do you think he might say? How would you answer him? Why do you think he talked? Describe the goldfish.)

4. Write a story called "My Adventures in Space."
(How do you think you would feel? What would you do? Why? What would you think about? How would your family and friends feel? What would they think about? Describe how the earth looks from your space capsule.)

5. Write a story called "The Coming of Winter."
(How do you know that winter is near? What can you see? What can you smell? What can you taste? How do you feel? What do you do?

Treatment of the Data. - Since the purpose of this experiment was to determine the amount of figurative language occurring in the compositions of 8-11 year old children, some procedure was needed to select such usage reliably. Barlow, Kerlin and Pollio (1970) have developed a rating procedure and programmed instruction technique designed to identify figurative language in psychotherapy protocols, and this technique was used in the present study. Basically, three raters are first trained to recognize 15 different types of figurative usage--ranging from metaphor and litote to oxymoron and metonymy--and are then asked to rate independently four different prose passages. Of these four passages, two are literary selections, one is a speech, and one is a transcript of a psychotherapy interview.

After each of these selections is rated, the three judges next meet together to talk about their ratings and to iron out differences. Raters not only are trained to recognize the occurrence of figurative language, they are also

asked to decide whether a given instance is a "frozen" or "novel" figure. By frozen we mean a figure has become a part of the ordinary vocabulary even though it could still be recognized as non-literal, i.e., she is bursting with joy; while by novel we mean that the rater has never experienced this usage before, i.e., "When evening is spread out against the sky/Like a patient etherized upon a table."

Once training was completed, and all raters felt confident that they could and did agree on these passages at least 80% of the time, they were then given a set of compositions and asked to rate them, one class at a time. Raters' judgements were tallied on the basis of the following coding scheme:

3 + 0: this means that all three raters independently judged this instance as figurative.

2 + 1: this means that two of the three raters independently judged this instance to be figurative and that during the group discussion the third rater agreed.

1 + 2: this means that only one of the raters independently judged the instance to be figurative but that after a group discussion the other two raters agreed.

2 - 1: this is the case in which two raters independently chose an instance as figurative but the third judge after discussion did not agree.

1 - 2: Finally, this is the case where one rater independently chose an instance as figurative but the other two raters still disagreed even after discussion.

Thus by using this system, an instance might be coded, 1 + 2 F. This would be a case in which the instance was first independently chosen by only one rater as figurative and after discussion the other raters agreed. This code

also reveals that the instance was judged to be frozen. Only those instances rated as 1 + 2 or better were counted as instances of figurative language in any composition.

Results

Reliability of Judgments. - One question that must be answered before it is possible to analyze age trends in figurative language concerns the pattern of agreements and disagreements among the three raters. Table 1 presents these

Insert Table 1 here

data for all three grades. Probably the best way in which to read this table is from the bottom up. For Grade 3 all raters scored a total of 168 units; for Grade 4 they scored 205 units; and for Grade 5, 253 units. Of the 168 units scored for Grade 3, 150 (88%) were agreed upon by all three raters after their discussion sessions, while 18 (12%) were never agreed upon. For Grade 4 raters agreed 85% of the time, while for Grade 6 raters agreed 82% of the time. Of the 150 units agreed upon for Grade 3, there were a total of 83 frozen figures and 67 novel ones; for Grade 4 there were 111 frozen and 67 novel; while for Grade 5 there were 142 and 72, respectively.

An examination of these judgments shows that for all three grades, raters found it easier to pick out novel than frozen metaphors. For Grade 3 the proportion of 3 + 0 and 2 + 1 judgments was .73 for novel figures and .54 for frozen figures. The comparable values were .70 and .58 for Grade 4 and .74 and .53 for Grade 5. What this means is that raters tended to miss frozen metaphors more frequently than novel ones, with about 45% of the frozen metaphors being noticed by only a single rater during his journey through the composition. Although the agreement values for the 2 + 1 and 3 + 0 condition reached about a 75% level for novel and a 53% level for frozen figures, these

"agreement values" are clearly very conservatively figured. It should be obvious that raters also agreed very frequently on the non-occurrence of metaphors, so that even the higher values of 88, 85 and 82% probably represent underestimates of how well raters actually agreed in doing this task.

In order to determine if there were any significant differences in mean number of figures of speech detected by each rater, a random sample of five children was drawn from each grade and an analysis of variance computed over these values. In no case were the between rater F-ratios greater than 1.00 (for Grade 3 $F_{2,8} = .99$; for Grade 4 $F_{2,8} = .92$; and for Grade 5 $F_{2,8} = .51$). What this means is that there were no significant differences among the total figures rated by each of the 3 raters for these randomly selected protocols. On the basis of all of these data then, we concluded that raters did not differ in their ability to detect figurative language and that the number of figures detected probably represents a conservative estimate of the number actually produced.

Length of Composition. - Before any meaningful conclusions can be drawn about how frequently figurative language occurs in the compositions of school age children, it is first necessary to find out if children in all three grades wrote compositions of equal length. The data on this point are quite unequivocal: they did not. For Grade 3 the average composition length was 98.7 words, while the comparable values for Grades 4 and 5 were 145.6 and 163.1 words, respectively. An analysis of variance showed these values to differ significantly ($F_{2,171} = 15.65$; $p < .001$) indicating that some correction for composition length had to be made before we could compare directly values across the three grade levels.

The statistic developed for this purpose was a simple one: all scores were converted to proportions; that is, the number of metaphors over the

number of words times 100. The reason for multiplying this value by 100 was to get rid of decimal scores and to express the number of metaphors as some number per 100 words of text. So, for example, if this value turned out to be 1.50, this means that students produced an average of 1.50 metaphors per 100 words of text.

Number of Figures for each Grade. - Once all scores had been converted to percentages, means were obtained for students in all three grades. These results are presented in Fig. 1 where it can be seen that students produced a

Insert Fig. 1 here

larger number of frozen than novel metaphors at each of the three grade levels. As Figure 1 also shows, the number of metaphors--both novel and frozen--decreased over successive grade levels, although this decrease was more marked for novel than for frozen figures.

Given these trends, a complex analysis of variance was computed over the scores. Since there was an unequal number of students in each of the classes, some corrections had to be made before we could carry out this statistical analysis. In order to correct for an unequal number of students in each class, the class with the smallest number of cases (N = 23) was chosen as the standard, and cases were dropped randomly from all other classes until there were only 23 students in the remaining 5 classes. In dropping cases, we were careful to equate the proportion of zero scores remaining with the proportion found in the original sample. So, for example, if a class had 35 scores and 7 were zero, we tried to have 20% of the final 23 scores selected also have a value of zero (i.e., between 4 and 5).

Once this correction had been applied, results showed that students produced a significantly larger number of frozen than novel figures; $F_{1,132} = 7.76$;

$p < .01$, and that the total percentages dropped significantly over the three grades considered, $F_{2,132} = 3.80$, $p < .025$. All other comparisons produced non-significant F-ratios.

Intercorrelations Among Response Measures. - Part of the reason for expressing the number of metaphors produced as a percentage was to correct for unequal composition length. But individual students within each grade also produced compositions of unequal length, and it seemed reasonable to ask if there was any relationship between composition length and the number of novel figures produced and composition length and the number of frozen figures produced. In addition, it also seemed reasonable to determine if students who produced a large number of novel figures also produced a large number of frozen figures.

Table 2 presents the pattern of intercorrelations for all 3 grades as well as the correlations for all grades combined. Looking first at the combined correlations, it can be seen that total words and frozen figures correlated more

Insert Table 2 here

strongly than total words and novel figures (.49 to .27) with this difference significant on the basis of a t-test ($t = 2.66$; $p < .01$). The correlation of .19, between frozen and novel figures, while marginally significant, is really too small to be of great practical importance. A further examination of such correlations for all three grades essentially confirms this conclusion: in 2 of 3 classes, the correlation between frozen and novel figures was essentially .00. An examination of the other two types of correlation produced results similar to that reported for the combined grades; significant and high positive correlations between words and frozen figures, and smaller, but still significant, correlations between words and novel figures. There is some small tendency for these latter two types of correlations to increase over successive grades.

Discussion

Contrary to conclusions suggested by Asch and Nerlove (1960), children in the present study were able to produce a substantial number of metaphors--both novel and frozen--even as early as the third grade. As a matter of fact, third grade children seemed to produce a greater proportionate amount of figurative language than children in higher grades.

How are these differences between our results and Asch and Nerlove's trends to be understood? Probably the most important difference concerns the task used to measure a child's command of figurative language. Asch and Nerlove were interested in seeing whether a child could explain why terms such as hot or sweet could refer both to physical and psychological aspects of things and people. In contrast, we were interested in seeing if children could make use of figurative language rather than in seeing if they could describe the "whys" and "wherefores" of such language. It is not an uncommon finding that the use of a language skill often surpasses a speaker's ability to describe what's going on. In the case of grammar, for example, we can all sense the difference between [They] [are flying] [planes], and [They] [are] [flying planes]; yet very few people could draw or even describe the appropriate phrase-structures. As we noted in the introduction, part of the reason for a child's inability to explicate the metaphoric relationships inherent in double-function terms may be because such terms are frozen or standard in the language. Under this condition it is not at all surprising that young children should consider such terms as homonyms than as semantically related words.

Using children's compositions as a source of data may also help account for the decrease in the number of metaphors produced over successive grades. Informal examination of these compositions showed very little change in vocabulary used, but similar to results found by Loban (1963), profound changes in the child's control of grammar and spelling. The composition task seems to be one in which

a child is very strongly concerned about getting a good grade, and that means: don't take chances with either spelling or grammar or word choice. In short, writing a composition seems to imply to the child do the best you can, but don't rock the boat. Experimentally this may mean that a more accurate way in which to assess development trends would be to have children speak their "compositions" rather than to write them. In this way it might be possible to remove the demand characteristics that go along with writing a composition in an elementary school classroom. In any event it is interesting to note that the composition task is one in which the child uses progressively less figurative language as he gains more experience in writing compositions.

Given these limiting conditions, what conclusions can be drawn in regard to figurative language? Here let us turn to the correlational data where the major finding was a strong correlation between number of words and frozen figures. Although it is difficult to interpret correlations unequivocally, these data do seem to imply that frozen metaphors function pretty much as regular vocabulary items and that the greater the written output, the greater the number of frozen figures. One other piece of data also suggesting that frozen figures should be considered largely as lexical items can be found in the relatively greater proportion of 1 + 2 ratings for frozen as opposed to novel figures. What this means is that all but one of the raters often missed such usage but that once it was pointed out, both other raters readily agreed. Such usage, in contrast to novel figures, is much less compelling and consequently much more easily missed.

The essentially zero correlations between number of frozen and novel figures simply means that subjects who produce a large number of novel metaphors do not necessarily produce a large number of frozen metaphors. If the appearance of novel metaphors in compositions can be considered as some indication of both metaphoric thinking and lack of concern over grades and if frozen metaphors represent simple lexical choices, then no correlation should be expected. Using

frozen figures is probably irrelevant to determining whether or not a child can think metaphorically and, by extension, creatively.

What about the small, but still significant, correlations between novel usage and composition length? Here again the issue revolves around the meaning of correlation; and here we may speculate that one property of novel usage is to promote greater interest and thereby increase the length of the composition produced. Unlike frozen figures, novel figures may serve to bring about longer compositions and are not simply a by-product of longer compositions. This is, of course, a post-hoc explanation and before we would put any confidence in it, we would have to test it further, i.e., by seeing if children presented with highly metaphoric composition-fragments would produce longer completions than students presented with composition fragments devoid of figurative language. In any case the experiment is do-able, and such results should help to clarify the relationship of novel metaphors to composition length.

EXPERIMENT II

In this experiment we were interested in finding out how frequently children used figurative language in tasks that might reasonably be expected to have demand properties different from those of a Composition Task. Of the two tasks chosen, the first involved using a word in a sentence and writing as many sentences with as many different meanings of that word as possible, while the second involved making comparisons between pairs of words. More specifically, in the first task children were asked to write as many sentences as they could to five different double-function words (e.g., cold, deep, crooked, etc.), while in the second task they were asked to make comparisons between three different pairs of words (e.g., window-water, baby-tomorrow, etc.). The specific words used in the Multiple Sentences Task included many of the same words used by Asch and Nerlove (1960) in the hope of providing some degree of comparability between our results and those reported by these earlier investigators.

Subjects.

The subjects were exactly the same as those used in the first sample; that is, two classes of children selected from each of three grade levels, third, fourth, and fifth, in an upper-middle-class white neighborhood.

Procedure.

The rating procedure used was also exactly the same as that used in Experiment I; that is, three judges independently rated the papers produced by all of the children and then discussed their ratings at a later time.

Reliability of Judgments.

Tables II-1 and II-2 present the reliability of the three raters' judgments for both of these new tasks. As can be seen, the reliability of rater judgments

INSERT TABLES II-1 AND II-2 HERE.

is comparable in all grades to those reported for the Composition Task. A further

examination of these tables shows that a very small number of judgments fell into the rejected (that is, 1-2 and 2-1) categories. As before, the reliability of rated judgments seemed sufficiently good so as to allow us to place some confidence in results to be reported in the next section.

RESULTS AND DISCUSSION

In order to examine the pattern and rate of figurative language over each of the three grade levels it was first necessary to find out if there were differences in the frequency of response for these new tasks as a function of grade. Table II-3 presents these data for both tasks for all three grade levels.

INSERT TABLE II-3 HERE.

In examining these data, it should be remembered that the Multiple Uses Task involved 5 words, whereas the Comparison Task involved only 3 word pairs. As can be seen from Table II-3, the mean number of sentences for all 5 words is about 10 for grades 3, 4, and 5 and there is no increasing trend over grades. What this means is that most subjects produced about 2 sentences for each of the words. An analysis of variance computed over these data produced a non-significant F-value of 2.60.

If we look now at the Comparison Task, mean values again fell in the range between 9 and 10. Since this task involved 3 pairs of words, we can see that the average child produced about three comparisons for each word pair. An analysis of variance computed over these data again failed to indicate a significant increase over grades ($F = 2.37$).

These data show that both the Multiple Uses and Comparison Tasks do not seem to increase in terms of total number of instances over grades. This pattern, as may be remembered, is different from that produced by the Composition Task where clearly longer compositions were written by fifth grade children as compared to third and fourth grade children.

Rate of Figurative Usage.

In order to make the scores obtained in Tasks 2 and 3 directly comparable to those obtained for Task 1, all values for each child were converted to proportions. What this means is that the rate of metaphoric usage for each of the two new tasks could be expressed in terms of the same measure; namely, the mean number of figures per 100 words of text. This, or course, is exactly the same proportional metric as had been used for the Composition Task, a condition which makes it possible to compare directly the influence of all three tasks on how frequently children used figurative language.

INSERT FIGURE II-1 HERE.

Figure II-1 presents the mean number of figures per 100 words of text for children at each grade level for the Multiple Uses Task (Task 2). As can be seen, the multiple use procedure produced a greater number of frozen than novel figures, although the number of frozen figures was considerably larger than occurred in the Composition Task. With the exception of Grade 5, the number of novel figures for this task fell at about the same level as for the Composition Task. Also to be noted is the general upward trend of both frozen and novel figures over grade levels with this increase more consistent for the frozen than novel figures. An analysis of variance computed over the data contained in Figure II-1 showed significant differences between the number of frozen and the number of novel figures, as well as a significant increase in both types of figurative language over all three grades.

What now of the Comparison Task (Task 3)? Figure II-2 presents the mean

INSERT FIGURE II-2 HERE.

number of figures per 100 words of text as a function of grade level for this task. As can be seen from the figure, the Comparison Task elicited a far greater number of novel than frozen figures, and both types of figurative language increa-

sed over grades. The absolute level of figurative language usage is also of some interest. As again can be seen from Fig. II-2, the number of novel figures evoked by this task was far in excess of that evoked by either of the other two tasks with the average for all three grades falling somewhere around 5.5 figures per 100 words of text. This is in contrast to the average values for both the Multiple Comparison and Composition Tasks where such values fell at much lower rates (i.e., in the Composition Task the average for novel figures for all 3 grades was less than 1 per 100 words of text, while the comparable value for the Multiple Uses Task was under 1.5 per 100 words of text).

If we look now at frozen figures, the results are somewhat different. The relative range of values over all three tasks for frozen figures is nowhere near as great as for novel figures, with the Composition Task producing a mean value of about 1.5 figures per 100 words of text, the Comparison Task producing a mean somewhat under 2.5 per 100 words of text, and the Multiple Uses Task producing a mean value somewhat under 3.5 per 100 words of text. If we rank these procedures in terms of their ability to elicit figurative language it is clear that the Comparison Task is best in evoking novel usage, and that the Multiple Uses Task is best in evoking frozen usage. The Composition Task, by contrast, seems to depress the child's use of both frozen and novel figurative language.

One other point is also of interest in these comparative data, and this concerns the progression of figurative usage over grades. For both the Multiple Uses and Comparison Tasks, there are moderate to strong increases in figurative language over grades, whereas the trend is exactly opposite for the Composition Task. These results indicate that there is a strong interaction between the type of task you ask a child to do and his seeming ability to use figurative language. The trend generally is that the Composition Task suppresses the use of both frozen and novel figures, that the Multiple Uses Task augments the use of frozen figures, and that the Comparison Task augments the use of novel figures.

In this regard it is well to remember that the Asch and Nerlove study used essentially a multiple uses procedure, and that this is the strongest condition for producing frozen figures of speech.

These data on the role of different tasks in evoking figurative language are really not too surprising when we consider what it is that figurative language does. The essential aspect of figurative language is to make a connection between two unlike ideas, and present results show that when we asked children to do a task which required them to relate two unlike ideas, their tendency was to produce more novel than frozen figures and that this tendency increased over grade levels. These data also seem to suggest that the Composition Task as it is presently construed in the public school system is not conducive to the production of figurative language, and that creative writing may in fact be a misnomer at least when measured from the perspective of how frequently children use figurative language. The Composition Task seems best construed in the elementary school context not as a task in creative writing, but rather as a task in the control and use of grammatical and lexical choice. On the basis of this analysis, something needs to be done in order once again to make "creative" writing, creative.

Present results can also be looked at in the context of Piaget's approach to cognitive growth. By usual definition, the children in this study were all in the concrete operational stage--that is, ranged in age from 8-10 years--and our results show that children at these ages were able to make use of metaphoric language. This result is in seeming contrast to results described by Asch and Nerlove (1960) who found children were unable to <u>explain</u> metaphoric language at this age, and were only able to do so when they were somewhat older, or, in Piagetian terms, were in the stage of formal operations. What this may mean is that children in the stage of concrete operations are able to use frozen and novel figurative language within a specific context but are unable to explicate

the use of frozen figurative language in completely abstract terms until they move from the stage of concrete operations to the stage of formal operations.

This would seem to make very good sense in the terms of the general tenor of the Piagetian analysis; namely, that in the stage of concrete operations, children are able to make use of highly abstract rules in concrete situations, but really are unable to talk about rules in purely abstract terms. The child's ability to use figurative language also seems to show these trends in that children are able to produce frozen figurative language in specific contexts far in advance of their ability to talk about frozen figurative language abstractly. Whether children can <u>explain</u> novel figures of speech before the stage of formal operations has yet to be tested, although the fact that they can <u>use</u> novel figures has been clearly demonstrated in the present study.

SUMMARY -- EXPERIMENTS I AND II.

Elementary school students in the third, fourth, and fifth grades were asked to do three different tasks in an attempt to determine how frequently children at these various ages use figurative language. Results for a Composition Task showed that children tend to produce a greater number of frozen than novel figures, and that the absolute level of such usage decreased over the three grades. Results for a Multiple Uses Task revealed that children tended to produce more frozen than novel figures and that both types of figures showed a marked increase over grade. Results for a Comparisons Task also indicated that the use of figurative language increased over grade level and that under the conditions of this task, children used more novel than frozen figures.

All in all, present results were taken to mean that the Composition Task is not a particularly good one for assessing developmental trends in figurative language usage. In addition, these results show that children as early as the third grade are able to use figurative language effectively, and that a Comparison Task represents one good way in which to encourage children to use novel figurative language. Taken in conjunction with earlier work done by Asch and Nerlove, present data suggest that children are able to use figurative language well before they are able to explain the exact nature of the relationship linking elements of the figure. In Piagetian terms, this may mean that children are able to use figurative language in the stage of concrete operations but are probably not able to explain such usage until much later; perhaps not until the stage of formal operations.

Footnotes

[1]We would like to thank Mrs. Jane Hawk, principal, West Hills Elementary School for allowing us to do our research in her school. We would also like to thank the following participating teachers: Mrs. G. Blackburn, Mrs. K. Chegwidden, Mrs. F. Prince, Mrs. I. McGuffy, Mrs. G. Bristow and Mrs. E. York. This research supported in part by Grant PEG-4-71-0066 from the Region IV Office of Education.

[2]We would like to thank Margaret and Jack Barlow and Darryl Lang, all of whom served as raters in the present study.

[3]These topics were suggested by Dr. Paul Burns, Professor of Curriculum and Instruction, School of Education, University of Tennessee, whose assistance is gratefully acknowledged.

Table 1

Pattern of Rater Agreements for Scoring and Figurative Language Categories Over All Three Grades

Rater Scoring Category	Grade											
	Third				Fourth				Fifth			
	Frozen		Novel		Frozen		Novel		Frozen		Novel	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
3 + 0	22	26%	31	46%	30	27%	18	27%	31	22%	31	43%
2 + 1	23	28%	18	27%	34	31%	29	43%	44	31%	22	31%
1 + 2	38	46%	18	27%	47	42%	20	30%	67	47%	19	26%
Subtotals	83		67		111		67		142		72	
Combined Subtotal [Accepted]	150		88%		178		85%		214		82%	
1 - 2	18				27				38			
2 - 1	0				0				1			
Subtotal [Rejected]	18		12%		27		15%		39		18%	
Total Units Scored	168		100%		205		100%		253		100%	

Table 2

Pattern of Intercorrelations Among All Measures
For All Three Grades Separately and Together

Correlation Between:	Grade			All Grades Combined
	3	4	5	
Number of Words and Frozen Figures	.42**	.39**	.62**	.49**
Number of Words and Novel Figures	.29*	.23*	.40**	.27**
Number of Frozen and Novel Figures	.04	.34**	.14	.19*
N	53	62	59	174

**p < .01

*p < .05

Table II-1 - Reliability of Rater Judgments - Multiple Uses Task.

Rater Scoring Category	Grade Level									
	3				4				5			
	Frozen		Novel		Frozen		Novel		Frozen		Novel	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
3 + 0	18	33%	14	42%	84	66%	18	56%	93	74%	43	68%
2 + 1	19	34%	11	33%	12	9%	10	31%	16	13%	14	22%
1 + 2	18	33%	8	24%	31	24%	4	13%	17	13%	6	10%
Subtotals	55		33		127		32		126		63	
Subtotals Accepted	88		94%		159		97%		189		98%	
1 - 2	5				4				3			
2 - 1	1				1				1			
Subtotal Rejected	6		6%		5		3%		4			
Total Units Scored	94		100%		164		100%		193		100%	

Table II-2 - Reliability of Rater Judgments - Comparison Task.

Rater Scoring Category	Grade											
	Third				Fourth				Fifth			
	Frozen		Novel		Frozen		Novel		Frozen		Novel	
	N	%	N	%	N	%	N	%	N	%	N	%
3 + 0	0	0%	26	33%	29	42%	41	35%	34	40%	96	62%
2 + 1	3	10%	30	38%	12	17%	50	43%	21	24%	43	28%
1 + 2	28	90%	22	28%	28	41%	26	22%	31	36%	16	10%
Subtotal	31		78		69		117		86		155	
Subtotal Accepted	109			91%	186			93%	241			97%
1 - 2	11				13				8			
2 - 1	0				1				0			
Subtotal Rejected	11			9%	14			7%	8			3%
Total Units Scored	120			100%	200			100%	249			100%

Table II-3 - Mean total responses for Multiple Uses and Comparison Tasks.

Task	Grade Level		
	3	4	5
Multiple Uses*	10.58	9.59	11.43
Comparisons**	10.25	9.37	8.27

* Involves all 5 words
** Involves 3 pairs of words

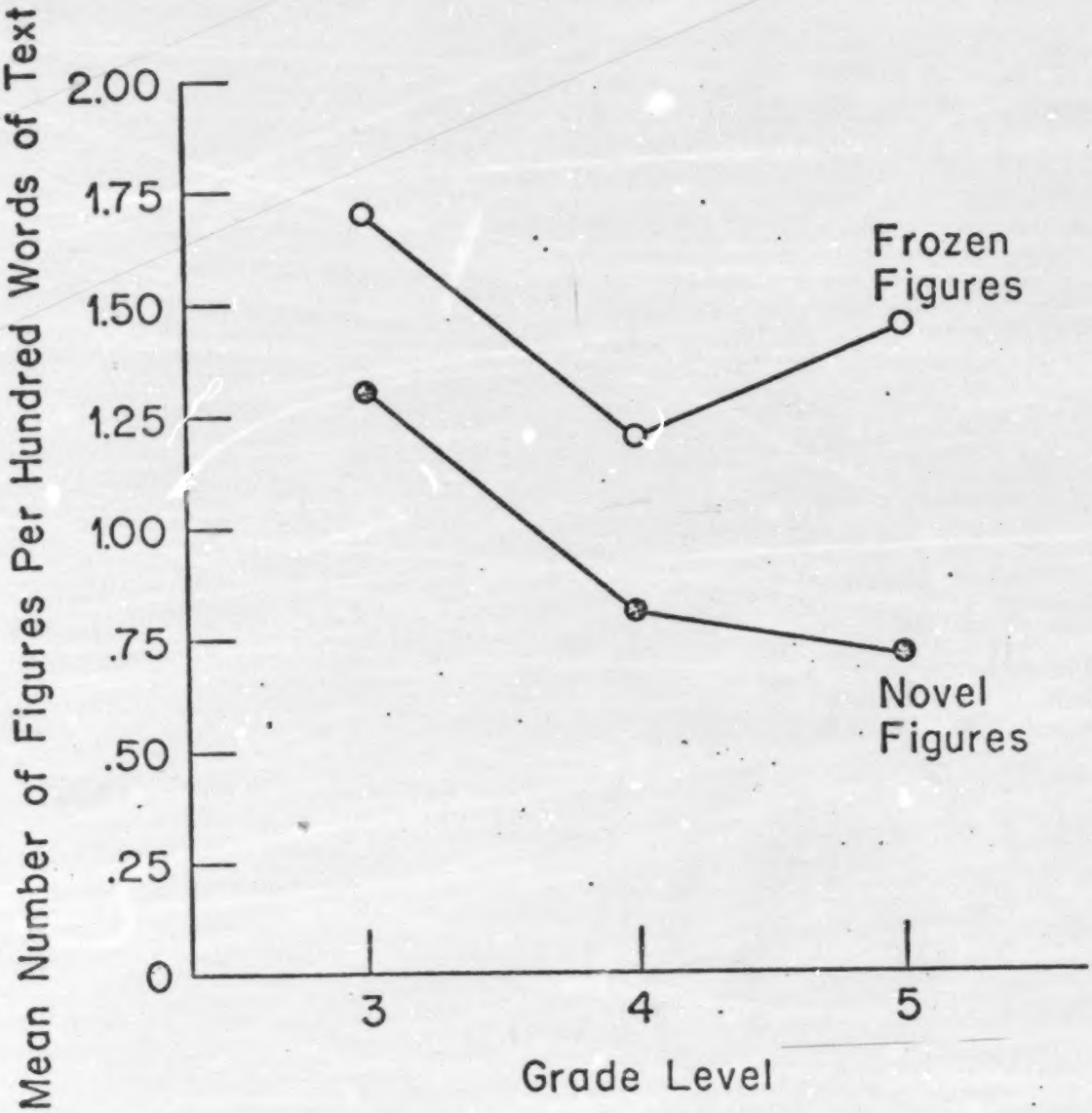
Mean Number of Figures Per Hundred Words of Text
2.00
1.75
1.50
1.25
1.00
.75
.50
.25
0
3
4
5
Grade Level
Frozen Figures
Novel Figures

Figure II-1 - Rate of Figurative Language Usage for All Three Grades - Multiple Uses Task.

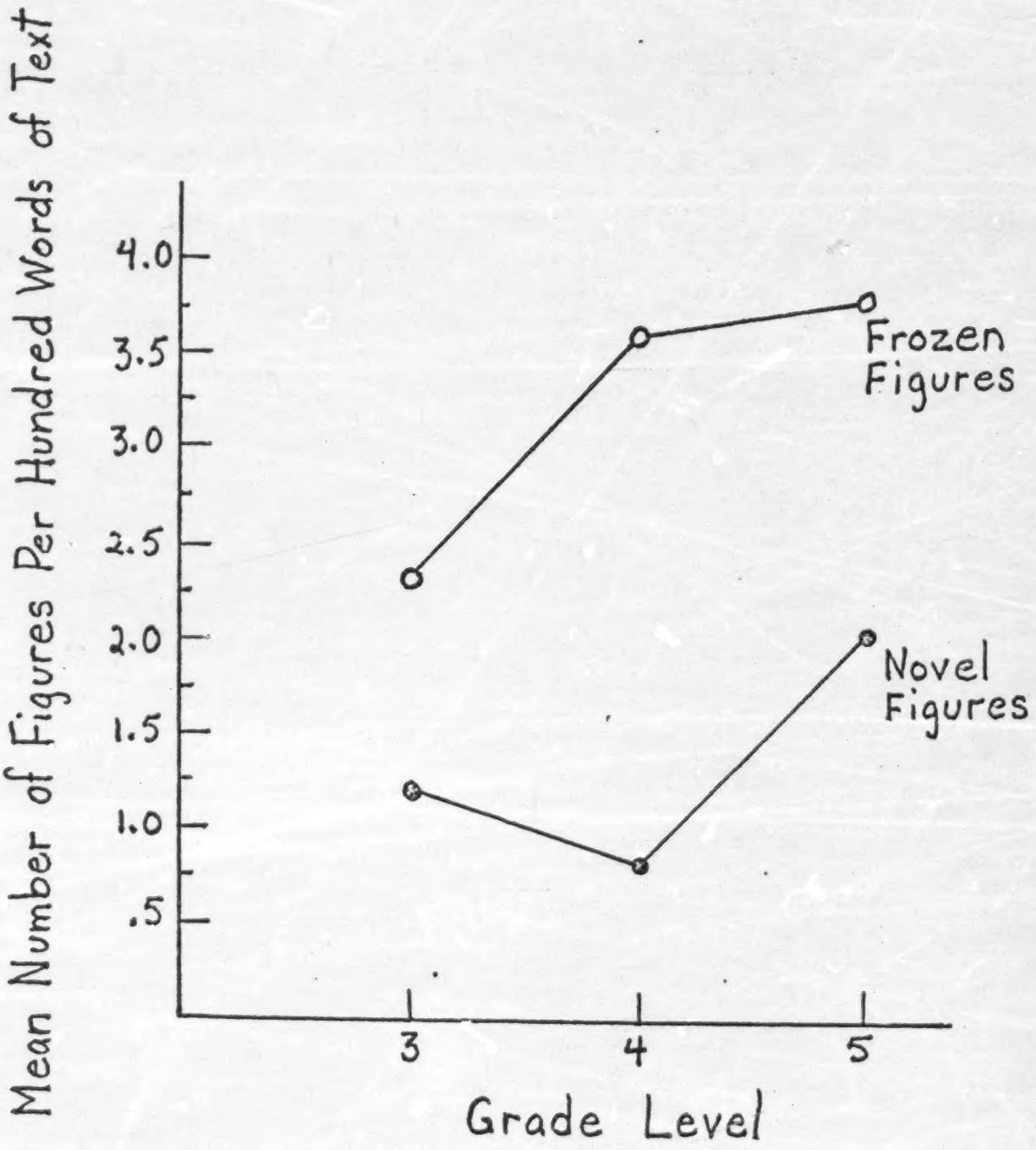
Mean Number of Figures Per Hundred Words of Text
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
Frozen Figures
Novel Figures
3
4
5
Grade Level

Figure II-2 - Rate of Figurative Language Usage for All Three Grades - Comparison Task.

Mean Number of Figures Per Hundred Words of Text
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
Novel Figures
Frozen Figures
3
4
5
Grade Level

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